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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/927,914	08/10/2001	Timothy P. Tully	1314.2004-001	5180

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EXAMINER	
CHONG, YONG SOO	
ART UNIT	**PAPER NUMBER**
1617	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/927,914	TULLY ET AL.	
	Examiner	Art Unit	
	Yong S. Chong	1617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 November 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4-8,14,16-20,49,51-57,60-64,98 and 100-104* is/are pending in the application.

4a) Of the above claim(s) *2,9,10,12,13,21,22,24-48,59 and 65-93* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4-8,14,16-20,49,51-57,60-64,98 and 100-104* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/31/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of the Application

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/16/2007 has been entered.

Claim(s) 2-3, 9-13, 15, 21-48, 50, 58-59, 65-97, 99, 105-106 have been cancelled. Claim(s) 1, 4-8, 14, 16-20, 49, 51-57, 60-64, 98, 100-104 are pending. Claim(s) 1, 4, 14, 49, 52, 57, 60, 98, 100 have been amended. Claim(s) 2, 9, 10, 12-13, 21-22, 24-48, 59, 65-93 have been withdrawn. Claim(s) 1, 4-8, 14, 16-20, 49, 51-57, 60-64, 98, 100-104 are examined herein.

Applicant's arguments have been fully considered but found not persuasive. The rejection(s) of the last Office Action are maintained for reasons of record and modified or repeated below for Applicant's convenience.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 4-8, 14, 16-20, 49, 51-57, 60-64, 98, 100-104 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a method of increasing performance gain during treatment of a cognitive deficit associated with a central nervous system disorder by administering the specific phosphodiesterase inhibitors, rolipram and iso-buto-metho-xanthine, does not reasonably provide enablement for all phosphodiesterase inhibitors. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to practice the invention commensurate in scope with these claims.

The instant specification fails to provide information that would allow the skilled artisan to fully practice the instant invention without undue experimentation. Attention is directed to *In re Wands*, 8 USPQ2d 1400 (CAFC 1988) at 1404 where the court set forth the eight factors to consider when assessing if a disclosure would have required undue experimentation. Citing *Ex parte Forman*, 230 USPQ 546 (BdApls 1986) at 547, the court recited eight factors: (1) the nature of the invention; (2) the state of the prior art; (3) the breadth of the claims; (4) the amount of direction or guidance presented; (5) the predictability or unpredictability of the art; (6) the relative skill of those in the art; (7) the presence or absence of working examples; and (8) the quantity of experimentation necessary.

(1) The Nature of the Invention: The rejected claims are drawn to an invention which pertains to a method of increasing performance gain during treatment of a cognitive deficit associated with a central nervous system disorder by administering any or all phosphodiesterase inhibitors.

(2) State of the Prior Art: The state of the art regarding phosphodiesterase inhibitors is relatively high, however the state of the art regarding a method of increasing performance gain during treatment of a cognitive deficit associated with a central nervous system disorder by administering any or all phosphodiesterase inhibitors is low.

(3) Breadth of Claims: The complex nature of the subject matter of this invention is greatly exacerbated by the breadth of the claims. The claims encompass every known inhibitor of phosphodiesterase.

(4) Guidance of the Specification: The guidance of the specification as to the method of increasing performance gain during treatment of a cognitive deficit associated with a central nervous system disorder by administering all phosphodiesterase inhibitors is lacking, with the exception of rolipram and iso-buto-metho-xanthine.

(5) The Predictability or Unpredictability of the Art: The invention is directed to a method of increasing performance gain during treatment of a cognitive deficit associated with a central nervous system disorder by administering all phosphodiesterase inhibitors. It is unpredictable to know that all phosphodiesterase inhibitors will have the same function.

(6) The Relative Skill of those in the Art: One of ordinary skill in the art does not know how to increase performance gain during treatment of a cognitive deficit associated with a central nervous system disorder by administering all phosphodiesterase inhibitors. On of ordinary skill in the art cannot identify all suitable phosphodiesterase inhibitors, let alone for the purpose of treating cognitive deficit associated with a central nervous system disorder.

(7) Working Examples: The specification is limited to only two phosphodiesterase inhibitors, rolipram and iso-buto-metho-xanthine.

(8) The Quantity of Experimentation Necessary: The specification fails to provide support for all phosphodiesterase inhibitors. There is undue burden for experimentation with all phosphodiesterase inhibitors. Nor does it provide information to practice the claimed invention, absent undue experimentation. Genetech, 108 F. 3d at 1366 states that "a patent is not a hunting license. It is not a reward for search, but compensation for its successful conclusion" and "patent protection is granted in return for an enabling disclosure of an invention, not for vague intimations of general ideas that may or may not be workable."

Response to Arguments

Applicant argues that phosphodiesterease inhibitors are known in the art and that one of ordinary skill in the art could readily test a phosphodiesterease inhibitor to determine whether it resulted in performance gain in training when compared to training in the absence of the phosphodiesterease inhibitor.

This is not persuasive because one of ordinary skill does not know how to identify every inhibitor of phosphodiesterease let alone apply the inhibitor in a method of increasing performance gain during treatment of a cognitive deficit associated with a central nervous system disorder without undue experimentation. Moreover, Applicant is reminded that the specification is limited to only two examples of phosphodiesterease inhibitor, rolipram and iso-buto-metho-xanthine.

The Tully Declaration under 37 CFR 1.132 filed 7/30/2007 is insufficient to overcome the rejection of claims 1, 4-8, 14, 16-20, 49, 51-57, 60-64, 98, 100-104 as set forth in the last Office action because the scientific opinion merely states the mechanism in which any augmenting agent which enhances CREB pathway function by inhibiting phosphodiesterease in combination with cognitive training would result in performance gain during treatment of a cognitive deficit associated with a central nervous system disorder. It is noted that no further data points commensurate with the scope of the claims (any and all phosphodiesterease inhibitors) are disclosed in the Tully Declaration.

In view of the foregoing, when all of the evidence is considered, the totality of the rebuttal evidence of nonobviousness fails to outweigh the evidence of obviousness.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in Graham vs John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim(s) 1, 4-8, 14, 16-20, 49, 51-57, 60-64, 98, 100-104 are rejected under 35 U.S.C. 103(a) as being obvious over Christensen et al. (US Patent 5,547,979) in view of the Merck Manual (of record).

The instant claims are directed to a method of increasing performance gain during treatment of a cognitive deficit associated with a central nervous system disorder by providing cognitive training and administering phosphodiesterase inhibitors.

Christensen et al. teach the phosphodiesterase inhibitor, rolipram (col. 11, line 14), in a method of treating stroke in a human (claim 1).

It is noted that the limitations regarding "which enhances CREB pathway function" and "wherein rehabilitation of said cognitive deficit is effected by producing a long-lasting performance gain" are given little patentable weight, because these biological processes are inherent when the same compound is administered in the same patient population at the same dosage.

"Products of identical chemical composition can not have mutual exclusive properties." Any properties exhibited by or benefits from are not given any patentable weight over the prior art provided the composition is inherent. A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the disclosed properties are necessarily present. *In re Spada*, 911 F.2d 705, 709, 15 USPQ 1655, 1658 (Fed. Cir. 1990). See MPEP 2112.01. The

burden is shifted to the applicant to show that the prior art product does not inherently possess the same properties as the instantly claimed product.

However, Christensen et al. fail to disclose multiple cognitive training sessions sufficient to produce an improvement in performance of a cognitive task whose deficit is associated with a central nervous system disorder.

The Merck Manual teaches that a training protocol should be started as early as possible towards a patient's rehabilitation to stroke. Such rehabilitation includes encouragement, orientation toward the outside environment, eating, dressing, toilet functions, other basic needs, passive exercise, particularly of paralyzed limbs, and breathing exercises, if possible, should be started early (pg. 1455-1456). It is noted that these rehabilitation techniques meet the limitation of cognitive training.

Therefore, it would have been prima facie obvious to a person of ordinary skill in the art, at the time the claimed invention was made, to have combined the cognitive multiple training sessions, as described in the Merck Manual, before and during administration of the phosphodiesterase inhibitor, rolipram, in the method of treating stroke in a human, as disclosed by Christensen et al.

A person of ordinary skill in the art would have been motivated to combine the two disclosed methods of treating a stroke patient because: (1) both Christensen and the Merck Manual disclose treatment for the same purpose, which is treating stroke patients and because (2) of the additive therapeutic effects of employing two methods of treating stroke simultaneously. Therefore, one of ordinary skill in the art would have had a reasonable expectation of success in treating stroke in a human by administering

a phosphodiesterase inhibitor, rolipram, in conjunction with a cognitive training protocol, outlined by the Merck Manual.

Response to Arguments

Applicant argues that the instant invention is not concerned with a method of treating stroke. This is not persuasive because treating stroke reads on the limitation "cognitive deficit associated with a central nervous system disorder or condition in an animal in need of" as stated in claim 1. In fact, "stroke" is listed in the specification (pg. 1) as one of the conditions that meet this limitation.

Applicant argues that Christensen et al. does not teach or suggest the administration of the compounds during cognitive training. Applicant also argues that the Merck Manual does not teach or suggest the administration of phosphodiesterase inhibitors before or during training. Examiner reminds Applicant that Christensen et al. clearly discloses the instant phosphodiesterase inhibitors and that the Merck Manual discloses cognitive training, both for the purpose of treating stroke victims.

In response to applicant's arguments against the references, one cannot show nonobviousness by attacking references individually where the rejections are based on the combination of references. See *In re Keller*, 642 F. 2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F. 2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Finally, Applicant argues that neither of the cited references teach or suggest "long-lasting performance gain effected by enhancement of CREB pathway function during rehabilitation."

This is not persuasive because said performance gain of a cognitive task in a stroke patient is an inherent property when the same compound is administered to the same patient at the same dose. Therefore, the "long lasting" and "enhancement of CREB pathway function" limitations are met because they are inherent properties. Moreover, the Examiner interprets performance gain of a cognitive task as covering a wide range of impairments, which include aphasia (language/speech disturbance) and apraxia (impaired ability to carry out motor activities), as disclosed in Applicant's own disclosure. Essentially, the scope of the instant claims cover administration of the phosphodiesterase inhibitors at any time to the patient. Therefore, Applicant's assertion that Christensen is simply teaching the administration of rolipram during the acute phase of the stroke to reduce TNF still meets the limitations of the instant claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yong S. Chong whose telephone number is (571)-272-8513. The examiner can normally be reached on M-F, 9-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, SREENI PADMANABHAN can be reached on (571)-272-0629. The fax phone number for the organization where this application or proceeding is assigned is (571)-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

YSC